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IS 8487 (1977): Phosalone Emulsifiable Concentrates [FAD 1: Pesticides and Pesticides Residue Analysis]



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**IS : 8487 - 1977**

*Indian Standard*  
**SPECIFICATION FOR  
PHOSALONE EMULSIFIABLE CONCENTRATES**

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**BUREAU OF INDIAN STANDARDS  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002**

**Gr 2**

*October 1977*

# Indian Standard

## SPECIFICATION FOR PHOSALONE EMULSIFIABLE CONCENTRATES

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**AMENDMENT NO. 1     MARCH 1981**  
**TO**  
**IS : 8487 - 1977 SPECIFICATION FOR**  
**PHOSALONE EMULSIFIABLE CONCENTRATES**

**Alterations**

( *Page 4, clause 2.2.1* ) — Substitute the following for the existing clause:

**'2.2.1 Description** — The material shall be a stable liquid and shall be free from sediment. Suspended matter shall be negligible. It shall readily form emulsion on dilution with water suitable for spray.'

( *Page 4, clause 2.3.1* ) — Substitute the following for the existing clause:

**'2.3.1 Phosalone Content** — When determined by the method prescribed in Appendix A of IS : 8488-1977† and 5.1.1 and 5.1.2, the observed phosalone content, percent by mass, of any of the samples shall not differ from the nominal value by more than the percent tolerance applied to the declared nominal value as given below:

<i>Nominal Value</i>	<i>Tolerance</i>	
percent	percent	
Up to 9	+ 10 — 5	} of the nominal value
Above 9 and below 50	± 5	
50 and above	+ 5 — 3	

( *Page 5, clause 3.1* ) — Substitute the following for the existing clause:

**'3.1 Packing** — The material shall be packed according to the requirements given in IS : 8190 ( Part II )-1980†.'

( *Page 5, foot-note with '†' mark* ) — Substitute the following for the existing foot-note:

†Requirements for packing of pesticides: Part II Liquid pesticides ( *first revision* ).'

( *Page 6, clause 5.1.2* ) — Substitute the following for the existing clause:

**'5.1.2** For spectrophotometer determination of the phosalone content, start with an accurately weighed sample up to third decimal place by

applying the formula  $\frac{A \times B}{C}$  and dissolve it in a 250 ml volumetric flask with absolute alcohol and make up to the mark.

where

$A$  = mass of reference technical taken (0.09 to 0.11 g);

$B$  = percentage purity of reference technical; and

$C$  = declared phosalone content, percent (m/m) [ see 3.2(g) ].

5.1.2.1 Take 5 ml of this solution into a 100-ml volumetric flask, add 10 ml of acetonitrile and make up to volume with absolute alcohol. Then proceed with 25 ml of this solution.'

### **Addendum**

( Page 5, clause 2.3.1.1 ) — Add the following new clause after 2.3.1.1:

'2.3.1.2 The average content of all samples taken shall not be lower than the nominal content.'

AMENDMENT NO.2 OCTOBER 1988  
TO  
IS:8487-1977 SPECIFICATION FOR PHOSALONE  
EMULSIFIABLE CONCENTRATES

(Page 4, clause 2.2.5) - Add the following Note  
at the end of the clause:

'Note - The material need not be subjected to  
heat treatment if it has crossed half of its shelf  
life as ascertained from the date of manufacture  
and date of expiry declared on the container.'

(AFCD 6)

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Reprography Unit, BIS, New Delhi, India

**AMENDMENT NO. 3    MAY 1994**  
**TO**  
**IS 8487 : 1977    SPECIFICATION FOR PHOSALONE EC**

( *Page 4, clause 2.2.5* ) — Delete.

( *Page 6, clause 4.1* ) — Substitute the following for the existing:

‘When freshly manufactured material in bulk quantity is offered for inspection, representative samples of the material shall be drawn and tested as prescribed in IS 10627 : 1983 within 90 days of its manufacture. When the material is offered for inspection after 90 days of its manufacture, sampling shall be done as prescribed in IS 10627 : 1983. However, the criteria for conformity of the material when tested, shall be the limits of tolerances, as applicable over the declared nominal value and given under clause 2.3.1 of the standard.’

**AMENDMENT NO. 4 NOVEMBER 1994  
TO  
IS 8487 : 1977 SPECIFICATION FOR PHOSALONE  
EMULSIFIABLE CONCENTRATES**

( Page 4, clause **2.2.1** ) — Substitute the following for the existing:

**'2.2.1 Description — The material shall be homogeneous and stable liquid. Sediment and/or suspended matter shall be negligible. On dilution with water, it shall readily form an emulsion suitable for spray.'**

( IAD 1 )

Reprography Unit, BIS, New Delhi, India

# *Indian Standard*

## SPECIFICATION FOR PHOSALONE EMULSIFIABLE CONCENTRATES

### 0. FOREWORD

**0.1** This Indian Standard was adopted by the Indian Standards Institution on 30 June 1977, after the draft finalized by the Pest Control Sectional Committee had been approved by the Agricultural and Food Products Division Council and the Chemical Division Council.

**0.2** Phosalone emulsifiable concentrates are largely used in the control of insect pests and mites of agricultural crops.

**0.3** Phosalone emulsifiable concentrate formulations are generally manufactured to contain 35 percent ( *m/m* ) of phosalone.

**0.4** In the preparation of this standard due consideration has been given to the provisions of the Insecticides Act, 1968 and the Rules framed thereunder. However, this standard is subject to the restrictions imposed under these, wherever applicable.

**0.5** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960\*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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### 1. SCOPE

**1.1** This standard prescribes the requirements and the methods of sampling and test for phosalone emulsifiable concentrates.

### 2. REQUIREMENTS

**2.1 Constituents** — The material shall consist of phosalone, technical, dissolved in suitable solvent(s), together with emulsifying agent(s), and with or without stabilizer(s).

**2.1.1** Phosalone, technical employed in the manufacture of this material shall conform to IS : 8488-1977†.

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\*Rules for rounding off numerical values ( *revised* ).

†Specification for phosalone, technical.

**2.2 Physical** — The material shall comply with the following physical requirements.

**2.2.1 Description** — The product shall consist of an emulsifiable concentrate based on phosalone as the only active ingredient, together with suitable solvents and any necessary formulants. It shall be free from suspended matter and sediment.

**2.2.2 Cold Test** — No turbidity or separation of solid and/or oily matter shall occur when the material is subjected to the cold test at 10°C as prescribed in 13.1 of IS : 6940-1973\* or any other lower temperature as agreed to between the purchaser and the vendor.

**2.2.3 Flash Point ( Abel )** — When determined by the method prescribed in IS : 1448 [ P : 20 ]-1960†, the flash point of the material shall be above 24.5°C.

**2.2.4 Emulsion Stability** — Any separation, including creaming at the top and sedimentation at the bottom, of 100 ml of emulsion prepared in standard hard water with 5 ml for public health use and 2 ml for agricultural use, shall not exceed 2 ml when tested by one of the methods prescribed in 13.3 of IS : 6940-1973\*.

**2.2.5 Heat Stability** — After treating in accordance with the method prescribed in 13.4 of IS : 6940-1973\* the material shall comply with the requirements of 2.2.1 to 2.2.4 and 2.3.1.

**2.3 Chemical** — The material shall comply with the following chemical requirements.

**2.3.1 Phosalone Content** — When determined by the method prescribed in Appendix A of IS : 8488-1977‡ the observed phosalone content, percent by mass, of any of the samples shall not differ from the nominal value by more than the percent tolerance applied to the declared nominal value as given below:

Nominal Value percent	Tolerance percent	
Up to 9	+ 10 - 5	} of the nominal value
10 and below 50	± 5	
50 and above	+ 5 - 3	

\*Methods of test for pesticides and their formulations.

†Methods of test for petroleum and its products: [ P : 20 ] Flash point by Abel apparatus.

‡Specification for phosalone, technical.

**2.3.1.1** The actual value of the phosalone content in the formulations shall be calculated to the second decimal place for rounding off to the first decimal place before applying the tolerances given in 2.3.1.

**2.3.2 Acidity/Alkalinity** — When tested by the method prescribed in 11.3 of IS : 6940-1973\*, the acidity (as  $H_2SO_4$ ), or alkalinity (as NaOH) of the material shall be not more than 0.1 and 0.1 percent by mass respectively.

### 3. PACKING AND MARKING

**3.1 Packing** — The material shall be packed in clean and dry containers made of mild steel or tin plate suitably and properly lacquered from inside. Aluminium containers may also be used. The containers shall also comply with general requirements as stipulated in 2 of IS : 8190 (Part II) - 1976†.

**3.2 Marking** — The containers shall bear legibly and indelibly the following information and any other additional information as is necessary under the Insecticides Act and Rules:

- a) Name of the material,
- b) Name of the manufacturer,
- c) Date of manufacture,
- d) Date of expiry,
- e) Batch number,
- f) Net volume of contents,
- g) Nominal phosalone content percent (m/m), and
- h) A cautionary notice worded as in the Insecticide Act and Rules.

**3.2.1** Each container may also be marked with the Standard Mark.

**NOTE** — The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act, 1986 and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

\*Methods of tests for pesticides and their formulations.

†Requirements for packing of pesticides: Part II Liquid pesticides.



#### **4. SAMPLING**

**4.1** Representative samples of the material shall be drawn as prescribed in 'Indian Standard Methods for sampling of pesticides and their formulations' ( *under preparation* ).

**NOTE** — Till such time the standard under preparation is published the matter shall be as agreed to between the concerned parties.

#### **5. TESTS**

**5.1** Tests shall be carried out by the appropriate methods referred to in 2.2.2 to 2.2.5, 2.3.1 and 2.3.2.

**5.1.1** For gas chromatographic test for determination of phosalone content start with 0.45 — 0.50 g of the sample and 0.07 — 0.08 g of the internal standard in 10 ml of diethylether, and take 0.15 — 0.17 g of standard and 0.07 — 0.08 g of internal standard for standard solution.

**5.1.2** For spectrophotometer determination of the phosalone content, start with an accurately weighed sample of 0.300 — 0.330 g and dissolve it in 250 ml volumetric flask with absolute alcohol and make up to the mark. Take 5 ml of this solution into a 100-ml volumetric flask, add 10 ml of acetonitrile and make up to volume with absolute alcohol. Then proceed with 25 ml of this solution. Carry out the same test on standard reference phosalone taking 0.09-0.11 g.

**5.2 Quality of Reagents** — Unless specified otherwise, pure chemicals and distilled water ( *see* IS : 1070-1977\* ) shall be employed in tests.

**NOTE** — ' Pure chemicals ' shall mean chemicals that do not contain impurities which affect the results of analysis.

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\*Specification for water for general laboratory use ( *second revision* ).

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Telephones : 3 31 01 31, 3 31 13 75

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## Telephone

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